

# Glossary

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The following terms are provided for reference and use with this Manual. They shall be superseded by any other definitions for these terms adopted by ordinance, unless they are defined in a Washington State WAC or RCW.

<b>Absorption</b>	The penetration of a substance into or through another, such as the dissolving of a soluble gas in a liquid.
<b>Adaptive management</b>	The modification of management practices to address changing conditions and new knowledge. Adaptive management is an approach that incorporates monitoring and research to allow projects and activities, including projects designed to produce environmental benefits, to go forward in the face of some uncertainty regarding consequences. The key provision of adaptive management is the responsibility to change adaptively in response to new understanding or information after an action is initiated.
<b>Adsorption</b>	The adhesion of a substance to the surface of a solid or liquid; often used to extract pollutants by causing them to be attached to such adsorbents as activated carbon or silica gel. Hydrophobic, or water-repulsing adsorbents, are used to extract oil from waterways when oil spills occur. Heavy metals such as zinc and lead often adsorb onto sediment particles.
<b>AKART</b>	<u>A</u> ll <u>K</u> nown, <u>A</u> vailable, and <u>R</u> easonable methods of prevention, control, and <u>T</u> reatment. The most current methodology that can be reasonably required for preventing, controlling, or abating the pollutants associated with a discharge. The concept of AKART applies to both point and nonpoint sources of pollution. Best Management Practices (BMPs) typically applied to nonpoint source pollution controls are considered a subset of the AKART requirement. The Stormwater Management Manual for Eastern Washington may be used as a guideline, to the extent appropriate, for developing best management practices to apply AKART for storm water discharges. AKART and Best Available Treatment (BAT) are roughly equivalent state and federal terms for the same concept.
<b>Annual flood</b>	The highest peak discharge, on average, which can be expected in any given year.
<b>Antecedent moisture conditions</b>	The degree of wetness of a watershed or within the soil at the beginning of a storm.
<b>Applicable BMPs</b>	As used in Chapters 2 and 8, applicable BMPs are those source control BMPs that are expected to be required by local governments at new development and redevelopment sites. Applicable BMPs will also be

required if they are incorporated into NPDES permits, or if they are included by local governments in a stormwater program for existing facilities.

<b>Aquifer</b>	A geologic stratum containing ground water that can be withdrawn and used for human purposes.
<b>Arid</b>	Excessively dry; having insufficient rainfall to support agriculture without irrigation.
<b>Arterial</b>	A road or street primarily for through traffic. A major arterial connects an interstate highway to cities and counties. A minor arterial connects major arterials to collectors. A collector connects an arterial to a neighborhood. A collector is not an arterial. A local access road connects individual homes to a collector.
<b>Average daily traffic (ADT)</b>	The expected number of vehicles using a roadway is represented by the projected average daily traffic volume considered in designing the roadway. ADT counts must be estimated using “Trip Generation” published by the Institute of Transportation Engineers or from a traffic study prepared by a professional engineer or transportation specialist with expertise in traffic volume estimation. ADT counts shall be made for the design life of the project. For project sites with seasonal or varied use, evaluate the highest period of expected traffic impacts.
<b>Bankfull discharge</b>	A flow condition where streamflow completely fills the stream channel up to the top of the bank. In undisturbed watersheds, the discharge conditions occur on average every 1.5 to 2 years and controls the shape and form of natural channels.
<b>Basic treatment</b>	Treatment of stormwater with the goal of removing at least 80% of the solids present in the runoff using one of the treatment facilities or methods identified in Chapter 5. Basic treatment is required for all discharges that meet the thresholds in Chapter 2.2.5. Additional treatment to remove metals, oil or phosphorus may be required at some sites or for some receiving water bodies.
<b>BAT</b>	<u>B</u> est <u>A</u> vailable <u>T</u> echnology. The most current technology available for controlling releases of pollutants to the environment. Major dischargers are required to use BAT unless it can be demonstrated that it is unfeasible for energy, environmental, or economic reasons. BAT and AKART are roughly equivalent federal and state terms for the same concept.
<b>BCT</b>	<u>B</u> est available <u>C</u> ontrol <u>T</u> echnology. All technologies and/or methods currently available for preventing releases of hazardous substances and demonstrated to work under similar site circumstances or through pilot studies, and applicable to the site at reasonable cost.

<b>Bedrock</b>	The more or less solid rock in place, either on or beneath the surface of the earth. It may be soft, medium, or hard and have a smooth or irregular surface.
<b>Beneficial uses</b>	Those water uses identified in state water quality standards that must be achieved and maintained as required under the Federal Clean Water Act. “Beneficial use” and “designated use” are often used interchangeably.
<b>Berm</b>	A constructed barrier of compacted earth, rock, or gravel. In a stormwater facility, a berm may serve as a vertical divider typically built up from the bottom.
<b>Best available science</b>	The technical provisions in the Stormwater Management Manual for Eastern Washington represent common provisions for the protection of waters of the state from adverse impacts of urban stormwater. Implementation of these provisions is necessary to minimize project specific and cumulative impacts to waters of the State. This Manual reflects the best available science and practices related to protection of water quality. The Manual will incorporate new information as it becomes available, and to allow for alternative practices that provide equal or greater protection for waters of the state.
<b>Best Management Practices (BMPs)</b>	The schedules of activities, prohibitions of practices, maintenance procedures, and structural and/or managerial practices approved by Ecology that, when used singly or in combination, prevent or reduce the release of pollutants and other adverse impacts to waters of Washington State.
<b>Buffer zone</b>	The area adjacent to a critical or sensitive area for which location and limits are described by federal, state, or local governments and intent is ensuring protection of the critical area by separating incompatible use from the critical or sensitive area.
<b>Catch basin</b>	A chamber or well, usually built at the curb line of a street, for the admission of surface water to a sewer or subdrain, having at its base a sediment sump designed to retain grit and detritus below the point of overflow.
<b>Catchment</b>	Surface drainage area.
<b>Cation exchange capacity (CEC)</b>	The amount of exchangeable cations that a soil can adsorb at pH 7.0.
<b>Channel, constructed</b>	Reconstructed natural channels or other channels or ditches constructed to convey surface water.

<b>Channel, natural</b>	Streams, creeks, or swales that convey surface water and groundwater and have existed long enough to establish a stable route and/or biological community.
<b>Channel stabilization</b>	Erosion prevention and stabilization of velocity distribution in a channel using vegetation, jetties, drops, revetments, and/or other measures.
<b>Channel storage</b>	Water temporarily stored in channels while enroute to an outlet.
<b>Channelization</b>	Alteration of a stream channel by widening, deepening, straightening, cleaning, or paving certain areas to change flow characteristics.
<b>Check dam</b>	Small dam constructed in a gully or other small watercourse to decrease the streamflow velocity, minimize channel scour, and promote deposition of sediment.
<b>Commercial agriculture</b>	Those activities conducted on lands defined in RCW 84.34.020(2), and activities involved in the production of crops or livestock for wholesale trade. An activity ceases to be considered commercial agriculture when the area on which it is conducted is proposed for conversion to a nonagricultural use or has lain idle for more than five (5) years, unless the idle land is registered in a federal or state soils conservation program, or unless the activity is maintenance of irrigation ditches, laterals, canals, or drainage ditches related to an existing and ongoing agricultural activity.
<b>Compaction</b>	The densification, settlement, or packing of soil in such a way that permeability of the soil is reduced. Compaction effectively shifts the performance of a hydrologic group to a lower permeability hydrologic group. For example, a group B hydrologic soil can be compacted and be effectively converted to a group C hydrologic soil in the way it performs in regard to runoff. Compaction may also refer to the densification of a fill by mechanical means.
<b>Contractor Erosion and Spill Control Lead (CESCL)</b>	The employee designated as the responsible representative in charge of erosion and spill control. The CESCL shall be qualified in construction site erosion and sediment control regulatory requirements and BMPs, and shall have thorough knowledge and understanding of the Construction Stormwater Pollution Prevention Plan (SWPPP) for the project site.
<b>Conveyance</b>	A mechanism for transporting water from one point to another, including pipes, ditches, and channels.
<b>Conveyance system</b>	The drainage facilities, both natural and man-made, which collect, contain, and provide for the flow of surface and stormwater from the highest points on the land down to a receiving water. The natural

elements of the conveyance system include swales and small drainage courses, streams, rivers, lakes, and wetlands. The human-made elements of the conveyance system include gutters, ditches, pipes, channels, and most retention/detention facilities.

<b>Critical area</b>	Any of the following areas and ecosystems: wetlands, areas with a critical recharging effect on aquifers used for potable water, fish and wildlife habitat conservation areas, frequently flooded areas, and geologically hazardous areas.
<b>Custom design storm</b>	A synthetic rainfall event used to design stormwater treatment facilities in a particular jurisdiction. The design storm must be based upon a statistical analysis of local historical precipitation data, and reviewed and approved by the jurisdiction.
<b>Dangerous waste</b>	According to RCW 70.105.010, any discarded, useless, unwanted, or abandoned substances, including, but not limited to, certain pesticides, or any residues or containers of such substances which are disposed of in such quantity or concentration as to pose a substantial, present, or potential hazard to human health, wildlife, or the environment. These wastes may have short-lived, toxic properties that may cause death, injury, or illness or have mutagenic, teratogenic, or carcinogenic properties; or be corrosive, explosive, flammable, or may generate pressure through decomposition or other means. See also <i>hazardous waste</i> .
<b>Design storm</b>	A prescribed hyetograph or precipitation distribution, and the total precipitation amount for a specific duration recurrence frequency. The design storm is used to estimate runoff for a hypothetical rainstorm of interest or concern for the purposes of analyzing existing drainage, designing new facilities, or assessing other impacts of a proposed project on the flow of surface water. Design storms discussed in this Manual include the SCS Type IA and Type II storms, a modified Type IA storm, the regional storm, the long-duration storm, the short-duration storm, and custom design storms.
<b>Design storm frequency</b>	The anticipated period in years that will elapse, based on average probability of storms in the design region, before a storm of a given intensity and/or total volume will recur. Thus a 10-year storm can be expected to occur on the average once every 10 years; the same storm has a 10 percent chance of occurring each year. Facilities designed to handle flows that occur under such storm conditions would be expected to be surcharged by any storms of greater amount or intensity.

<b>Detention</b>	The release of stormwater runoff from the site at a slower rate than it is collected by the stormwater facility system, the difference being held in temporary storage.
<b>Detention facility</b>	An above or below ground facility, such as a pond or tank, that temporarily stores stormwater runoff and subsequently releases it at a slower rate than it is collected by the drainage facility system. There is little or no infiltration of stored stormwater.
<b>Detention time</b>	The theoretical time required to displace the contents of a stormwater treatment facility at a given rate of discharge (volume divided by rate of discharge).
<b>Development</b>	Means new development, redevelopment, or both. See definitions for each.
<b>Discharge</b>	Runoff leaving a new development or redevelopment via overland flow, built conveyance systems, or infiltration facilities. A hydraulic rate of flow, specifically fluid flow; a volume of fluid passing a point per unit of time, commonly expressed as cubic feet per second, cubic meters per second, gallons per minute, gallons per day, or millions of gallons per day.
<b>Dispersion</b>	Release of surface and stormwater runoff from a drainage facility system such that the flow spreads over a wide area, and is located so as not to allow flow to concentrate anywhere upstream of a drainage channel with erodible underlying granular soils.
<b>Ditch</b>	A long narrow excavation dug in the earth for drainage with its top width less than 10 feet at design flow.
<b>Divide, Drainage</b>	The boundary between one drainage basin and another.
<b>Drain</b>	A buried pipe or other conduit (closed drain). A ditch (open drain) for carrying off surplus surface water or ground water.
<b>Drywell</b>	A well completed above the water table so that its bottom and sides are typically dry except when receiving fluids. Drywells are designed to disperse water below the land surface and are commonly used for stormwater management in eastern Washington. See also UIC.
<b>Effective impervious surface</b>	Those impervious surfaces that are connected via sheet flow or a conveyance system to a drainage system. Most impervious areas are effective.
<b>Emerging technology</b>	Treatment technologies that have not been evaluated with approved protocols, but for which preliminary data indicate that they may provide a necessary function(s) in a stormwater treatment system.

	Emerging technologies need additional evaluation to define design criteria to achieve, or to contribute to achieving, state performance goals, and to define the limits of their use.
<b>Erodible or leachable materials</b>	Substances which, when exposed to rainfall, measurably alter the physical or chemical characteristics of the rainfall runoff. Examples include: erodible soils that are stockpiled, uncovered process wastes, manure, fertilizers, oily substances, ashes, kiln dust, and garbage dumpster leakage.
<b>Erosion</b>	The wearing away of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep. Also, detachment and movement of soil or rock fragments by water, wind, ice, or gravity.
<b>Erosion and sedimentation control (ESC)</b>	Any temporary or permanent measures taken to reduce erosion, control siltation and sedimentation, and ensure that sediment-laden water does not leave the site.
<b>Erosion and sediment control facility</b>	A type of drainage facility designed to hold water for a period of time to allow sediment contained in the surface and stormwater runoff directed to the facility to settle out, so as to improve the quality of the runoff.
<b>Evapotranspiration</b>	The collective term for the processes of evaporation and plant transpiration by which water is returned to the atmosphere.
<b>Excavation</b>	The mechanical removal of earth material.
<b>Exception</b>	Relief from the application of a Core Element to a project.
<b>Existing condition</b>	The impervious surfaces, drainage systems, land cover, native vegetation and soils that exist at the site with approved permits and engineering plans when required. If sites have impervious areas and drainage systems that were built without approved permits, then the existing condition is defined as those that existed prior to the adoption of this Manual. These conditions can be verified by record aerial photography, or other methods.
<b>First order stream</b>	An unbranched tributary. The tributary is a continuous perennial stream reach, meaning that the water table is always above the bottom of the stream channel during a year of normal precipitation and the perennial reach continues downstream to a confluence with another perennial stream.
<b>Fish-bearing stream</b>	According to WAC 222-16-030: Type S, F and Np waters are fish habitat streams. Until these fish habitat water type maps are available,

an interim water typing system applies (see WAC 222-16-031): Type 1, 2, 3, and 4 waters are fish habitat streams.

<b>Flood</b>	An overflow or inundation that comes from a river or any other source, including (but not limited to) streams, tides, wave action, storm drains, or excess rainfall. Any relatively high stream flow overtopping the natural or artificial banks in any reach of a stream.
<b>Flood frequency</b>	The frequency with which the flood of interest may be expected to occur at a site in any average interval of years. Frequency analysis defines the $x$ -year flood as being the flood that will, over a long period of time, be equaled or exceeded on the average once every $x$ years.
<b>Flood routing</b>	An analytical technique used to compute the effects of system storage dynamics on the shape and movement of flow represented by a hydrograph.
<b>Flow duration</b>	The aggregate time peak flows are at or above a particular flow rate of interest. For example, the amount of time peak flows are at or above 50% of the 2-year peak flow rate for a period of record.
<b>Flow frequency</b>	The inverse of the probability that the flow will be equaled or exceeded in any given year (the exceedance probability). For example, if the exceedance probability is 0.01 or 1 in 100, that flow is referred to as the 100-year flow.
<b>Flow path</b>	The route that stormwater runoff follows between two points of interest.
<b>Forest practice</b>	Any activity conducted on or directly pertaining to forest land and relating to growing, harvesting, or processing timber, including but not limited to: road and trail construction; harvesting, final and intermediate; precommercial thinning; reforestation; fertilization; prevention and suppression of diseases and insects; salvage of trees; and brush control.
<b>Freeway</b>	A multi-lane, arterial highway with full access control.
<b>Frost-heave</b>	The upward movement of soil surface due to the expansion of water stored between particles in the first few feet of the soil profile as it freezes. May cause surface fracturing of asphalt or concrete and(or) affect soil infiltration capacity.
<b>Functions</b>	The ecological (physical, chemical, and biological) processes or attributes of a water body without regard for their importance to society. Functions include food chain support, provision of ecosystem diversity and fish and wildlife habitat, floodflow alteration, ground

	water recharge and discharge, water quality improvement, and soil stabilization.
<b>Groundwater</b>	Water in a saturated zone or stratum beneath the land surface or beneath a surface water body.
<b>Groundwater recharge</b>	Inflow to a groundwater reservoir or aquifer.
<b>Groundwater table</b>	The free surface of the ground water, that surface subject to atmospheric pressure under the ground, generally rising and falling with the season, the rate of withdrawal, the rate of restoration, and other conditions. It is seldom static.
<b>Gully</b>	A channel caused by the concentrated flow of surface and stormwater runoff over unprotected erodible land.
<b>Habitat</b>	The specific area or environment in which a particular type of plant or animal lives. An organism's habitat must provide all of the basic requirements for life and should be protected from harmful biological, chemical, and physical alterations.
<b>Hazardous waste</b>	According to RCW 70.105.010 includes all dangerous and extremely hazardous waste, including substances composed of both radioactive and hazardous components. See also <i>dangerous waste</i> .
<b>Hazardous substance</b>	According to RCW 70.105.010 any liquid, solid, gas, or sludge, including any material, substance, product, commodity, or waste, regardless of quantity, that exhibits any of the characteristics or criteria of <i>hazardous waste</i> . See also <i>dangerous waste</i> .
<b>High ADT roadways and parking areas</b>	Any road with average daily traffic (ADT) greater than 30,000 vehicles per day; and parking areas with more than 100 trip ends per 1,000 square feet of gross building area or greater than 300 total trip ends are considered to be high-use traffic areas. Examples include commercial buildings with a frequent turnover of customers and other visitors.
<b>High use sites</b>	<p>Sites that generate high concentrations of oil due to high traffic turnover or the frequent transfer of oil and(or) other petroleum products. High-use sites are land uses where sufficient quantities of free oil are likely to be present, such that they can be effectively removed with special treatment. A high-use site is any one of the following:</p> <ul style="list-style-type: none"> <li>• A road intersection with expected ADT of 25,000 vehicles or more on the main roadway and 15,000 vehicles or more on any</li> </ul>

intersecting roadway, excluding projects proposing primarily pedestrian or bicycle use improvements;

- A commercial or industrial site with an expected trip end count equal to or greater than 100 vehicles per 1,000 square feet of gross building area (best professional judgment should be used in comparing this criterion with the following criterion);
- A customer or visitor parking lot with an expected trip end count equal to or greater than 300 vehicles (best professional judgment should be used in comparing this criterion with the preceding criterion);
- Commercial on-street parking areas on streets with an expected total ADT count equal to or greater than 7,500;
- Fueling stations and facilities;
- A commercial or industrial site subject to petroleum storage and transfer in excess of 1,500 gallons per year, not including locations where heating fuel is routinely delivered to end users (heating fuel handling and storage facilities are subject to this definition);
- A commercial or industrial site subject to use, storage, or maintenance of a fleet of 25 or more diesel vehicles that are over 10 tons gross weight (trucks, buses, trains, heavy equipment, etc.);
- Maintenance and repair facilities for vehicles, aircraft, construction equipment, railroad equipment or industrial machinery and equipment;
- Outdoor areas where hydraulic equipment is stored;
- Log storage and sorting yards and other sites subject to frequent use of forklifts and(or) other hydraulic equipment;
- Railroad yards.

**Highway**

A main public road connecting towns and cities.

**Horton overland flow**

A runoff process whereby the rainfall rate exceeds the infiltration rate, so that the precipitation that does not infiltrate flows downhill over the soil surface.

**HSPF**

Hydrological Simulation Program-Fortran. A continuous simulation hydrologic model that transforms an uninterrupted rainfall record into a concurrent series of runoff or flow data by means of a set of mathematical algorithms which represent the rainfall-runoff process at some conceptual level.

<b>Hydrograph</b>	A graph of runoff rate, inflow rate, discharge rate, or another characteristic of a body of water during a specific period of time.
<b>Hydrologic cycle</b>	The circuit of water movement from the atmosphere to the earth and return to the atmosphere through various stages or processes as precipitation, interception, runoff, infiltration, percolation, storage, evaporation, and transpiration.
<b>Hydrologic soil groups</b>	<p>A soil characteristic classification system defined by the U.S. Soil Conservation Service in which a soil may be categorized into one of four soil groups (A, B, C, or D) based upon infiltration rate and other properties:</p> <p><u>Type A:</u> Low runoff potential. Soils having high infiltration rates, even when thoroughly wetted, and consisting chiefly of deep, well drained to excessively drained sands or gravels. These soils have a high rate of water transmission.</p> <p><u>Type B:</u> Moderately low runoff potential. Soils having moderate infiltration rates when thoroughly wetted, and consisting chiefly of moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission.</p> <p><u>Type C:</u> Moderately high runoff potential. Soils having slow infiltration rates when thoroughly wetted, and consisting chiefly of soils with a layer that impedes downward movement of water, or soils with moderately fine to fine textures. These soils have a slow rate of water transmission.</p> <p><u>Type D:</u> High runoff potential. Soils having very slow infiltration rates when thoroughly wetted, and consisting chiefly of clay soils with a high swelling potential, soils with a permanent high water table, soils with a hardpan, till, or clay layer at or near the surface, soils with a compacted subgrade at or near the surface, and shallow soils or nearly impervious material. These soils have a very slow rate of water transmission (Novotney and Olem, 1994).</p>
<b>Hydrology</b>	The science of the behavior of water in the atmosphere, on the surface of the earth, and underground.
<b>Hydroperiod</b>	A seasonal occurrence of flooding and/or soil saturation; it encompasses depth, frequency, duration, and seasonal pattern of inundation.
<b>Hyetograph</b>	A graph or table of percentages of total precipitation for a series of time steps representing the total time in which precipitation occurs.
<b>Illicit discharge</b>	All non-stormwater discharges to stormwater drainage systems that cause or contribute to a violation of state water quality, sediment quality or groundwater quality standards, including, but not limited to,

sanitary sewer connections, industrial process water, interior floor drains, car washing, and grey-water systems.

<b>Impaired waters</b>	Water bodies not fully supporting their beneficial uses.
<b>Impervious surface</b>	<p>A hard surface area which either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development.</p> <p>A hard surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled, macadam or other surfaces which similarly impede the natural infiltration of stormwater. For purposes of determining whether thresholds for application of Core Elements are exceeded, open, uncovered retention or detention facilities shall not be considered as impervious surfaces. Open, uncovered retention or detention facilities shall be considered impervious surfaces for purposes of runoff modeling.</p>
<b>Improvements</b>	Improvement projects replace paved or other impervious areas with a better surface, and(or) in a way that enhances the traffic carrying capacity of a road or parking area, and(or) improves safety.
<b>Industrial activities</b>	Material handling, transportation, or storage; manufacturing; maintenance; treatment; or disposal. Areas with industrial activities include plant yards, access roads and rail lines used by carriers of raw materials, manufactured products, waste material, or by-products; material handling sites; refuse sites; sites used for the application or disposal of process waste waters; sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas for raw materials, and intermediate and finished products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to stormwater.
<b>Ineffective impervious surface</b>	Impervious surfaces on residential development sites where the runoff is not concentrated and is dispersed via sheet flow off the pavement, and then through at least one hundred feet of native vegetation before flowing into a drainage system. An example is a tennis court in the middle of a park.
<b>Infiltration</b>	The downward movement of water from the land surface to the subsoil.
<b>Infiltration facility (or system)</b>	A drainage facility designed to use the hydrologic process of surface and stormwater runoff soaking into the ground, commonly referred to

as a percolation, to dispose of surface and stormwater runoff.

<b>Infiltration rate</b>	The rate, usually expressed in inches per hour, at which water percolates, or moves downward through the soil profile. Short-term infiltration rates may be inferred from soil analysis or texture, or derived from field measurements. Long-term infiltration rates are affected by variability in soils and subsurface conditions at the site, the effectiveness of pretreatment or influent control, and the degree of long-term maintenance of the infiltration facility.
<b>Interflow</b>	That portion of rainfall that infiltrates into the soil and moves laterally through the upper soil horizons until intercepted by a stream channel or until it returns to the surface, for example, in a roadside ditch, wetland, spring or seep. Interflow is a function of the soil system depth, permeability, and water-holding capacity.
<b>Intermittent stream or intermittent channel</b>	A stream or portion of a stream that flows only in direct response to precipitation. Intermittent streams receive little or no water from springs and no long-continued supply from melting snow or other sources, and are dry for a large part of the year.
<b>Irrigation ditch</b>	That portion of a designed and constructed conveyance system that serves the purpose of transporting irrigation water from its supply source to its place of use. This may include natural water courses or channels incorporated in the system design, but does not include the area adjacent to the water course or channel.
<b>Isopluvial map</b>	A map with lines representing constant depth of total precipitation for a given return frequency.
<b>Lag time</b>	The interval between the center of mass of the storm precipitation and the peak flow of the resultant runoff.
<b>Land disturbing activity</b>	Any activity that results in movement of earth, or a change in the existing soil cover (both vegetative and non-vegetative) and/or the existing soil topography. Land disturbing activities include, but are not limited to clearing, grading, filling, and excavation. Compaction associated with stabilization of structures and road construction shall also be considered a land disturbing activity. Vegetation maintenance practices are not considered land-disturbing activity.
<b>Leachable materials</b>	Those substances that, when exposed to rainfall, measurably alter the physical or chemical characteristics of the rainfall runoff. Examples include: erodible soils, uncovered process wastes, manure, fertilizers, oil substances, ashes, kiln dust, and garbage dumpster leakage.
<b>Level pool routing</b>	The basic technique of storage routing used for sizing and analyzing detention storage and determining water levels for ponding water

bodies. The level pool routing technique is based on the continuity equation: inflow minus outflow equals change in storage.

**Local government**

Any county, city, town, or special purpose district having its own incorporated government for local affairs.

**Long-duration design storm**

One of the four design storms consisting of two rainfall events separated by a dry period that were developed for climatic regions identified in eastern Washington. The storms were based on a statistical analysis of historical precipitation in Eastern Washington and have been adapted for use in this Manual as single-hump design storms consisting of only one continuous rainfall event. See “Modified SCS Type IA design storm” and “regional design storm.” Also see further discussion in Appendix 4A.

**Low ADT roadways and parking areas**

Urban roads with average daily traffic (ADT) fewer than 7,500 vehicles per day; rural roads and freeways with ADT less than 15,000 vehicles per day; and parking areas with less than 40 trip ends per 1,000 square feet of gross building area or fewer than 100 total trip ends per day are considered to be low-use traffic areas. Examples include: most residential parking and employee-only parking areas for small office parks or other commercial buildings.

**Low flow channel**

An incised or paved channel from inlet to outlet in a dry basin which is designed to carry low runoff flows and(or) baseflow, directly to the outlet without detention.

**Low impact development (LID)**

LID is an evolving approach to land development and stormwater management using the natural features of a site and specially designed BMPs to manage stormwater. LID involves assessing and understanding the site, protecting native vegetation and soils, and minimizing and managing stormwater at the source. LID practices appropriate for a variety of development types.

**Low permeable liner**

A layer of compacted till or clay, or a geomembrane.

**Maintenance**

Repair and maintenance includes activities conducted on currently serviceable structures, facilities, and equipment that involves no expansion or use beyond previously existing use, and resulting in no significant adverse hydrologic impact. It includes those usual activities taken to prevent a decline, lapse, or cessation in the use of structures and systems, and includes replacement of disfunctioning facilities, including cases where environmental permits require replacing an existing structure with a different type structure, as long as the functioning characteristics of the original structure are not changed. For example, replacing a collapsed, fish blocking, round culvert with a new box culvert under the same span, or width, of

roadway. For further details on the application of this manual to various road management functions, see Chapter 2.1.2 through 2.1.4.

**MEP**

Maximum Extent Practicable. The highest level of effectiveness that can be achieved through the use of personnel and best achievable technology. In determining what is the maximum extent practicable, Ecology shall consider, at a minimum, the effectiveness, engineering feasibility, commercial availability, safety, and the cost of the measures.

**Metals**

Elements such as lead, mercury, copper, cadmium, and zinc which are of environmental concern, because they can be toxic to aquatic life and do not degrade over time.

**Mitigation**

In the following order of preference, mitigation means:

- (a) Avoiding the impact altogether by not taking a certain action or part of an action;
- (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;
- (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
- (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
- (e) Compensating for the impact by replacing, enhancing, or providing substitute resources or environments.

**Moderate ADT roadways and parking areas**

Urban roads with average daily traffic (ADT) between 7,500 and 30,000 vehicles per day; rural roads and freeways with ADT between 15,000 and 30,000 vehicles per day; and parking areas with between 40 and 100 trip ends per 1,000 square feet of gross building area or between 100 and 300 total trip ends per day are considered to be moderate-use traffic areas. Examples include visitor parking for small to medium commercial buildings with a limited number of daily customers.

**Moderate use sites**

Moderate-use sites include “moderate ADT roadways and parking areas,” primary access points for high-density residential apartments, most intersections controlled by traffic signals, and transit center bus stops. These sites are expected to generate sufficient concentrations of metals that additional runoff treatment is needed to protect water quality in non-exempt surface waters.

**Modified SCS Type IA design storm**

An adapted application of the synthetic SCS Type IA design storm to more closely reflect historical precipitation patterns in eastern Washington. Antecedent moisture conditions and precipitation depths are modified to reflect more typical conditions. See Chapter 4.2.3 for

a complete description.

**Modified wetland**

A wetland where physical, hydrological, or water quality characteristics have been purposefully altered for a management purpose, such as, by dredging, filling, forebay construction, and inlet or outlet control.

**Monitoring**

The systematic collection of data by various methods for the purposes of understanding natural systems and features, evaluating the impacts of development proposals on such systems, and assessing the performance of mitigation measures imposed as conditions of development.

**Municipality**

The term ‘municipality’ shall include every city, county, town, district, or other public agency thereof which is authorized by law to require the execution of public work, except drainage districts, diking districts, diking and drainage improvement districts, drainage improvement districts, diking improvement districts, consolidated diking and drainage improvement districts, consolidated drainage improvement districts, consolidated diking improvement districts, irrigation districts, or any such other districts as shall from time to time be authorized by law for the reclamation or development of waste or undeveloped lands.

**Native growth  
protection easement**

An easement granted for the protection of native vegetation within a sensitive area or its associated buffer. The NPGE shall be recorded on the appropriate documents of title and filed with the county records division.

**Native vegetation**

Vegetation comprised of plant species that are indigenous to Eastern Washington and which reasonably could have been expected to naturally occur on the site. Plant species classified as noxious weeds are excluded from this definition.

**Natural conditions**

Surface water quality present before any human-caused pollution. When estimating natural conditions in the headwaters of a disturbed watershed it may be necessary to use the less disturbed conditions of a neighboring or similar watershed as a reference condition.

**Natural location**

The location of those channels, swales, and other non-manmade conveyance systems, as defined by the first documented topographic contours existing for the subject property, either from maps or photographs, or such other means as appropriate. In the case of outwash soils with relatively flat terrain, no natural location of surface discharge may exist.

**New development**

Land disturbing activities, including Class IV general forest practices that are conversions from timber land to other uses; structural

development, including construction or installation of a building or other structure; creation of impervious surfaces; and subdivision, short subdivision and binding site plans, as defined and applied in Chapter 58.17 RCW. Projects meeting the definition of redevelopment shall not be considered new development.

**Nonfish-bearing stream**

According to WAC 222-16-030: Type Ns waters are nonfish habitat streams. Until these fish habitat water type maps are available, an interim water typing system applies (see WAC 222-16-031): Type 5 waters are nonfish habitat streams.

**Non-pollutant generating impervious surfaces (NPGIS)**

NPGIS are considered to be insignificant or low sources of pollutants in stormwater runoff. Roofs that are subject only to atmospheric deposition or normal heating, ventilation and air conditioning vents are considered NPGIS. The following may also be considered NPGIS: paved bicycle pathways and pedestrian sidewalks that are separated from and not subject to drainage from roads for motor vehicles, fenced fire lanes, infrequently used maintenance access roads, and “in-slope” areas of roads. Sidewalks that are regularly treated with salt or other deicing chemicals are not considered NPGIS.

**Nonpoint source pollution**

Pollution that enters any waters of the state from any dispersed land-based or water-based activities and does not result from discernible, confined, or discrete conveyances.

**NPDES**

National Pollutant Discharge Elimination System. A provision of the Clean Water Act which prohibits point-source discharges of pollutants into waters of the United States unless a special permit is issued and administered by the U.S. Environmental Protection Agency or by Ecology, as the delegated authority in Washington State. Municipal separate stormwater sewer systems are classified as point-source discharges.

**NRCS Method**

See SCS Method.

**Nutrients**

Essential chemicals needed by plants or animals for growth. Excessive amounts of nutrients can lead to degradation of water quality and algal blooms. Some nutrients can be toxic at high concentrations.

**Off-line facilities**

Water quality treatment facilities to which stormwater runoff is restricted to some maximum flow rate or volume by a flow-splitter.

**Off-system storage**

Facilities for holding or retaining excess flows over and above the carrying capacity of the stormwater conveyance system, in chambers, tanks, lagoons, ponds, or other basins that are not a part of the subsurface sewer system.

<b>Oil/water separator</b>	A vault, usually underground, designed to provide a quiescent environment to separate oil from water.
<b>On-line facilities</b>	Water quality treatment facilities which receive all of the stormwater runoff from a drainage area. Flows above the water quality design flow rate or volume are passed through at a lower percent removal efficiency.
<b>On-site stormwater management BMPs</b>	Development and mitigation techniques that serve to infiltrate, disperse, and retain stormwater runoff on a project site.
<b>Operational BMPs</b>	Operational BMPs are a type of source control BMP. They are schedules of activities, prohibition of practices, and other managerial practices to prevent or reduce pollutants from entering stormwater. Operational BMPs include formation of a pollution prevention team, good housekeeping, preventive maintenance procedures, spill prevention and clean-up, employee training, inspections of pollutant sources and BMPs, and record keeping. They can also include process changes, raw material/product changes, and recycling wastes.
<b>Ordinary high water mark</b>	The line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of soil destruction on terrestrial vegetation, or the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding area. The ordinary high water mark is found by examining the bed and banks of a stream and ascertaining where the presence and action of waters are so common and usual, and so long maintained in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland, in respect to vegetation. In any area where the ordinary high water mark cannot be found, the line of mean high water shall substitute. In any area where neither can be found, the channel bank shall be substituted. In braided channels and alluvial fans, the ordinary high water mark or substitute shall be measured so as to include the entire stream feature.
<b>Orifice</b>	An opening with closed perimeter, usually sharp-edged, and of regular form in a plate, wall, or partition through which water may flow, generally used for the purpose of measurement or control of water.
<b>Outlet</b>	Point of water disposal from a stream, river, lake, tidewater, or artificial drain.
<b>Outlet channel</b>	A waterway constructed or altered primarily to carry water from man-made structures, such as terraces, tile lines, and diversions.
<b>Overflow</b>	A pipeline or conduit device, together with an outlet pipe, that provides for the discharge of portions of combined sewer flows into

receiving waters or other points of disposal, after a regular device has allowed the portion of the flow which can be handled by interceptor sewer lines and pumping and treatment facilities to be carried by and to such water pollution control structures.

<b>Overflow rate</b>	Detention basin release rate divided by the surface area of the basin. It can be thought of as an average flow rate through the basin.
<b>Overtopping</b>	Flow over the limits of a containment or conveyance element.
<b>Particle size</b>	The effective diameter of a particle as measured by sedimentation, sieving, or micrometric methods.
<b>Peak discharge</b>	The maximum instantaneous rate of flow during a storm, usually in reference to a specific design storm event.
<b>Peak-shaving</b>	Controlling post-development peak discharge rates to pre-development levels by providing temporary detention in a BMP.
<b>Percolation</b>	The movement of water through soil.
<b>Percolation rate</b>	The rate, often expressed in minutes per inch, at which clear water, maintained at a relatively constant depth, will seep out of a standardized test hole that has been previously saturated. The term percolation rate is often used synonymously with infiltration rate or short-term infiltration rate.
<b>Perennial stream</b>	A stream reach that does not go dry during a year of normal precipitation: the elevation of the water table is always above the bottom of the stream channel during a year of normal precipitation.
<b>Permanent Stormwater Control (PSC) Plan</b>	A plan which includes permanent Best Management Practices (BMPs) for preventing and controlling pollution of stormwater runoff. These BMPs will remain in place after construction and(or) land disturbing activity has been completed.
<b>Permeable soils</b>	Soil materials with a sufficiently rapid infiltration rate so as to greatly reduce or eliminate surface and stormwater runoff. These soils are generally classified as SCS hydrologic soil types A and B.
<b>Pesticide</b>	A general term used to describe any substance - usually chemical - used to destroy or control organisms; includes herbicides, insecticides, algicides, fungicides, and others. Many of these substances are manufactured and are not naturally found in the environment. Others, such as pyrethrum, are natural toxins that are extracted from plants and animals.

<b>pH</b>	A measure of the alkalinity or acidity of a substance which is conducted by measuring the concentration of hydrogen ions in the substance. A pH of 7.0 indicates neutral water. A 6.5 reading is slightly acid.
<b>Physiography</b>	Characteristics of the natural physical environment (including hills).
<b>Plan Approval Authority</b>	The department within a local government that has been delegated authority to approve stormwater site plans.
<b>Plat</b>	A map or representation of a subdivision showing the division of a tract or parcel of land into lots, blocks, streets, or other divisions and dedications.
<b>Point discharge</b>	The release of collected and/or concentrated surface and stormwater runoff from a pipe, culvert, or channel.
<b>Point of compliance</b>	The location at which compliance with a discharge performance standard or a receiving water quality standard is measured.
<b>Pollution</b>	Contamination or other alteration of the physical, chemical, or biological properties of waters of the state, including change in temperature, taste, color, turbidity, or odor of the waters; or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state as will, or is likely to, create a nuisance or render such waters harmful, detrimental, or injurious to the public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish or other aquatic life.
<b>Pollutant-generating impervious surface (PGIS)</b>	PGIS are considered to be significant sources of pollutants in stormwater runoff. Such surfaces include those that are subject to vehicular use, industrial activities, or storage of erodible or leachable materials that receive direct rainfall, or run-on or blow-in of rainfall. Metal roofs are considered to be PGIS, unless coated with an inert, non-leachable material. Roofs that are subject to venting of manufacturing, commercial, or other indoor pollutants are also considered PGIS. A surface, whether paved or not, shall be considered PGIS if it is regularly used by motor vehicles. The following are considered regularly-used surfaces: roads, unvegetated road shoulders, bike lanes within the traveled lane of a roadway, driveways, parking lots, unfenced fire lanes, vehicular equipment storage yards, and airport runways.
<b>Pollution-generating pervious surface (PGPS)</b>	Any non-impervious surface subject to use of pesticides and fertilizers, or loss of soil. Typical PGPS include lawns, landscaped areas, golf courses, parks, cemeteries, and sports fields.

<b>Pre-developed condition</b>	The native vegetation and soils that existed at a site prior to the influence of Euro-American settlement. Jurisdictions may choose to require that either the pre-developed condition or the “existing condition” be used to calculate runoff volumes to be compared to the runoff generated under the “proposed development condition.” Because there is limited information available to identify and confirm actual pre-developed conditions for many areas of eastern Washington, jurisdictions may choose to apply a reasonably determined set of conservative curve numbers for use in determining the runoff volume compared to that under the proposed development condition.
<b>Prediction</b>	For the purposes of this document an expected outcome based on the results of hydrologic modeling and/or the judgment of a trained professional civil engineer or geologist.
<b>Preservation/maintenance</b>	A preservation or maintenance project is defined as preserving/protecting infrastructure by rehabilitating or replacing existing structures to maintain operational and structural integrity, and for the safe and efficient operation of the facility. Traffic area maintenance projects do not increase the traffic carrying capacity of a roadway or parking area.
<b>Pretreatment</b>	The removal of material such as solids, grit, grease, and scum from flows prior to physical, biological, or physical treatment processes to improve treatability. Pretreatment may include screening, grit removal, settling, oil/water separation, or application of a basic treatment BMP prior to infiltration.
<b>Process wastewater</b>	The used water and solids from an industrial source. This water should be directed to a treatment facility and kept separate from the stormwater generated from the site.
<b>Project</b>	Any proposed action to alter or develop a site; or the proposed action of a permit application or an approval which requires drainage review.
<b>Project site</b>	That portion of a property, properties, or right of way subject to land disturbing activities, and new or replaced impervious surfaces.
<b>Proposed development condition</b>	The impervious surfaces, drainage systems, land cover, native vegetation and soils that are proposed to exist at the site at the completion of the project (complete build-out).
<b>Properly Functioning Soil System (PFSS)</b>	A natural system that has not been disturbed or modified, or an engineered soil/landscape system designed to meet certain criteria.
<b>Rare, threatened, or endangered species</b>	Native plant or animal species listed in rule by the Washington State Department of Fish and Wildlife pursuant to RCW 77.12.020 as threatened (WAC 232-12-011) or endangered (WAC 232-12-014), or

that are listed as threatened or endangered species under the federal Endangered Species Act, 16 U.S.C. 1533. Rare plant or animal species are regionally relatively uncommon, are nearing endangered status, or whose existence is in immediate jeopardy and is usually restricted to highly specific habitats. Rare species are unofficial species of concern.

**Rational Method**

A method of computing storm drainage flow rates ( $Q$ ) by use of the formula  $Q = CIA$ , where  $C$  is a coefficient describing the physical drainage area,  $I$  is the rainfall intensity, and  $A$  is the area. In this Manual, use of the Rational Method is limited to sizing only certain types of runoff treatment facilities, drywells, and conveyance; see Chapter 4.

**Reach**

A length of a water body with uniform characteristics.

**Receiving waters**

Bodies of water or surface water systems to which surface runoff is discharged via a point source of stormwater or via sheet flow.

**Recommended BMPs**

As used in Chapters 2 and 8, recommended BMPs are those BMPs that are not expected to be mandatory by local governments at new development and redevelopment sites. However, they may improve pollutant control efficiency, and may provide a more comprehensive and environmentally effective stormwater management program.

**Redevelopment**

On a site that is already substantially developed, the replacement or improvement of impervious surfaces, including buildings and other structures, and replacement or improvement of impervious parking and road surfaces, that is not part of a routine maintenance activity. (Any new impervious surfaces created by a redevelopment project are subject to the requirements for new development.) See Chapter 2.1.2 for a complete detail of requirements for redevelopment projects.

**Regional design storm**

A custom synthetic design storm taken from the *long-duration design storm* which was based upon a statistical analysis of historical precipitation data from gaging stations in eastern Washington. The four regional storms consist of the second, or larger precipitation event of the two contained in each of four the long-duration storms identified for the four climatic regions of eastern Washington.

**Regional detention facility**

A stormwater quantity control structure designed to correct existing surface water runoff problems of a basin or subbasin. The area downstream has been previously identified as having existing or predicted significant and regional flooding and/or erosion problems. This term is also used when a detention facility is sited to detain stormwater runoff from a number of new developments or areas within a catchment.

<b>Release rate</b>	The computed peak rate of surface and stormwater runoff from a site.
<b>Replaced impervious surface</b>	For structures, the removal and replacement of any exterior impervious surfaces or foundation. For other impervious surfaces, the removal down to bare soil, or base course and replacement.
<b>Residential density</b>	The number of dwelling units per unit of surface area. Net density includes only occupied land. Gross density includes unoccupied portions of residential areas, such as roads and open space.
<b>Retention</b>	The process of collecting and holding surface and stormwater runoff with no surface outflow.
<b>Retention/detention (R/D) facility</b>	A type of drainage facility designed either to hold water for a considerable length of time and then release it by evaporation, plant transpiration, and/or infiltration into the ground; or to hold surface and stormwater runoff for a short period of time and then release it to the surface and stormwater management system.
<b>Retrofitting</b>	The renovation of an existing structure or facility to meet changed conditions or to improve performance.
<b>Return frequency or recurrence interval</b>	A statistical term for the average expected time interval between events (e.g., flows, floods, droughts, or rainfall) that equal or exceed given conditions.
<b>Runoff</b>	Water originating from rainfall and other precipitation that is found in drainage facilities, rivers, streams, springs, seeps, ponds, lakes, and wetlands, as well as shallow ground water. As applied in this manual, it also means the portion of rainfall or other precipitation that becomes surface flow and interflow.
<b>Saturation point</b>	In soils, the point at which a soil or an aquifer will no longer absorb any amount of water without losing an equal amount.
<b>SCS</b>	<u>Soil Conservation Service</u> (now the Natural Resources Conservation Service), U.S. Department of Agriculture.
<b>SCS Method</b>	A single-event hydrologic analysis technique for estimating runoff based on the Curve Number method. The Curve Numbers are published by the SCS, now NRCS, in <i>Urban Hydrology for Small Watersheds, 55 TR, June 1986</i> . Since the change in the agency's name, the method may be referred to as the NRCS Method.
<b>Seasonal stream</b>	A stream or segments of a stream that normally goes dry during a year of normal rainfall. Seasonal streams often receive water from springs and/or long-continued water supply from melting snow or other sources.

<b>Sediment</b>	Fragmented material that originates from weathering and erosion of rocks or unconsolidated deposits, and is transported by, suspended in, or deposited by water.
<b>Semi-arid</b>	Characterized by light rainfall; having from about 10 to 20 inches of annual precipitation.
<b>Sensitive area</b>	Any area designated by a federal, state, or local government to have unique or important environmental characteristics that may require special additional protective measures. These areas include, but are not limited to: wetlands and their buffer zones, stream riparian areas, well-head protection areas, and geologic hazard areas. See also <i>critical area</i> .
<b>Settleable solids</b>	Those suspended solids in stormwater that separate by settling when the stormwater is held in a quiescent condition for a specified time.
<b>Sheet flow</b>	Runoff that flows over the ground surface as a thin, even layer, not concentrated in a channel.
<b>Short-duration design storm</b>	A synthetic three-hour custom design storm that represents rainfall during a typical summer thunderstorm in eastern Washington. The storm is based upon a statistical analysis of historical precipitation data from gaging stations in eastern Washington.
<b>Siltation</b>	The process by which a river, lake, or other waterbody becomes clogged with sediment. Silt can clog gravel beds and prevent successful salmon spawning.
<b>Site</b>	The area defined by legal boundaries of a parcel or parcels of land that is (are) subject to new development or redevelopment. For road projects, the length of the project site and the right-of-way boundaries define the site.
<b>Soil stabilization</b>	The use of measures, such as rock lining, vegetation or other engineering structures, to prevent the movement of soil when loads are applied to the soil.
<b>Sorption</b>	The physical or chemical binding of pollutants to sediment or organic particles.
<b>Source control BMP</b>	A structure or operation intended to prevent pollutants from coming into contact with stormwater through physical separation of areas or careful management of activities that are sources of pollutants. This manual separates source control BMPs into two types. <i>Structural source control BMPs</i> are physical, structural, or mechanical devices or facilities that are intended to prevent pollutants from entering stormwater. <i>Operational BMPs</i> are non-structural practices that

prevent or reduce pollutants from entering stormwater. See Chapter 8 for details.

<b>Spill control device</b>	A tee section or turn down elbow designed to retain a limited volume of pollutant that floats on water, such as oil or antifreeze. Spill control devices are passive and must be cleaned-out for the spilled pollutant to actually be removed.
<b>Spillway</b>	A passage such as a paved apron or channel for surplus water over or around a dam or similar obstruction. An open or closed channel, or both, used to convey excess water from a reservoir. It may contain gates, either manually or automatically controlled, to regulate the discharge of excess water.
<b>Storage routing</b>	A method to account for the attenuation of peak flows passing through a detention facility or other storage feature.
<b>Storm drain system</b>	The system of gutters, pipes, streams, or ditches used to carry surface and stormwater from surrounding lands to streams or lakes.
<b>Storm sewer</b>	A sewer that carries stormwater and surface water, street wash and other wash waters or drainage, but excludes sewage and industrial wastes. Also called a “storm drain.”
<b>Stormwater</b>	That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows, via overland flow, interflow, pipes and other features of a stormwater drainage system, into a defined surface water body or a constructed infiltration facility.
<b>Stormwater drainage system</b>	Constructed and natural features which function together as a system to collect, convey, channel, hold, inhibit, retain, detain, infiltrate, divert, treat, or filter stormwater.
<b>Stormwater facility</b>	A constructed component of a stormwater drainage system designed or constructed to perform a particular function or multiple functions. Stormwater facilities include, but are not limited to: pipes, swales, ditches, culverts, street gutters, detention ponds, retention ponds, constructed wetlands, infiltration devices, catch basins, oil/water separators, and biofiltration swales.
<b>Stormwater Management Manual for Eastern Washington (Stormwater Manual, or “Manual”)</b>	This Manual, as prepared by Ecology, contains BMPs to prevent, control, or treat pollution in stormwater, and reduce other stormwater-related impacts to waters of the state. The Stormwater Manual is intended to provide guidance on measures necessary in eastern Washington to control the quantity and quality of stormwater runoff from new development and redevelopment.

<b>Stormwater Site Plan (SSP)</b>	The comprehensive report containing all of the technical information and analysis necessary for regulatory agencies to evaluate a proposed new development or redevelopment project for compliance with stormwater requirements. Contents of the Stormwater Site Plan will vary with the type and size of the project and individual site characteristics. It includes a Construction Stormwater Pollution Prevention Plan (Construction SWPPP) and a Permanent Stormwater Control Plan (PSC Plan). Guidance on preparing a SSP is provided in Chapter 3.
<b>Stream</b>	An area where surface waters flow sufficiently to produce a defined channel or bed. A defined channel or bed is an area that demonstrates clear evidence of the passage of water including, but not limited to, hydraulically sorted sediments, or the removal of vegetative litter or loosely rooted vegetation by the action of moving water. The channel or bed need not contain water year-round. This definition is not meant to include irrigation ditches, canals, stormwater runoff devices or other entirely artificial watercourses, unless they are used to convey streams naturally occurring prior to construction. Those topographic features that resemble streams but have no defined channels (i.e., swales) shall be considered streams when hydrologic and hydraulic analyses done pursuant to a development proposal predict formation of a defined channel after development.
<b>Stream order</b>	A dimensionless basin characteristic indicating the degree of stream channel branching, used in geomorphology and runoff studies. An $n$ th order stream is formed by two or more streams of $(n-1)$ order: a second order stream exists below the confluence of two first order streams, a third order stream below the confluence of two second order streams, and so on.
<b>Subbasin</b>	A drainage area that drains to a water-course or water body named and noted on common maps and which is contained within a basin.
<b>Susceptibility</b>	The ease with which contaminants can move from the land surface to the aquifer, based solely on the types of surface and subsurface materials in the area. Susceptibility usually defines the rate at which a contaminant will reach an aquifer unimpeded by chemical interactions with the vadose zone media.
<b>Suspended solids</b>	Organic or inorganic particles suspended in and carried by the water. The term includes sand, mud, and clay particles (and associated pollutants), as well as solids in stormwater.
<b>Swale</b>	A shallow drainage conveyance with relatively gentle side slopes, generally with flow depths less than one foot.

<b>Tightline</b>	A continuous length of pipe that conveys water from one point to another (typically down a steep slope) with no inlets or collection points in between.
<b>Time of concentration</b>	The time period necessary for surface runoff to reach the outlet of a subbasin from the hydraulically most remote point in the tributary drainage area.
<b>TMDL</b>	<u>Total Maximum Daily Load</u> , also known as a “Water Cleanup Plan.” A calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and an allocation of that amount to the pollutant’s sources. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. The calculation must include a margin of safety to ensure that the water body can be used for the purposes the state has designated. The calculation must also account for seasonable variation in water quality. Water quality standards are set by states, territories, and tribes. They identify the uses for each water body, for example, drinking water supply, contact recreation (swimming), and aquatic life support (fishing), and the scientific criteria to support that use. The Clean Water Act, section 303, establishes the water quality standards and TMDL programs.
<b>Topography</b>	General term to include characteristics of the ground surface, such as plains, hills, mountains, degree of relief, steepness of slopes, and other physiographic features.
<b>Travel time</b>	The estimated time for surface water to flow between two points of interest.
<b>Treatment BMP</b>	A BMP that is intended to remove pollutants from stormwater. A few examples of treatment BMPs are detention ponds, oil/water separators, biofiltration swales, and constructed wetlands.
<b>Treatment liner</b>	A layer of soil that is designed to slow the rate of infiltration and provide sufficient pollutant removal so as to protect groundwater quality.
<b>Treatment train</b>	A combination of two or more treatment facilities connected in series.
<b>Trip end</b>	The expected number of vehicles using a parking area is represented by the projected trip end counts for the parking area associated with a proposed land use. Trip end counts must be estimated using “Trip Generation” published by the Institute of Transportation Engineers or from a traffic study prepared by a professional engineer or transportation specialist with expertise in traffic volume estimation. Trip end counts shall be made for the design life of the project. For project sites with seasonal or varied use, evaluate the highest period of

expected traffic impacts.

<b>Turbidity</b>	Dispersion or scattering of light in a liquid, caused by suspended solids and other factors; commonly used as a measure of suspended solids in a liquid.
<b>UIC</b>	<u>Underground Injection Control</u> . A federal regulatory program established to protect underground sources of drinking water from UIC well discharges. A UIC well is defined as a bored, drilled, or driven shaft whose depth is greater than the largest surface dimension; or a dug hole whose depth is greater than the largest surface dimension; or an improved sinkhole; or a subsurface fluid distribution system which includes an assemblage of perforated pipes, drain tiles, or other similar mechanisms intended to distribute fluids below the surface of the ground. Examples of UIC wells or a subsurface infiltration systems are drywells, drain fields, catch basins, pipe or french drains, and other similar devices that discharge to ground.
<b>Upgrade</b>	The replacement of paved areas with a better surface or in a way that enhances the traffic capacity of the road.
<b>Urban runoff</b>	Stormwater from streets and adjacent domestic or commercial properties that may carry pollutants of various kinds into storm sewers or drywells and/or receiving waters.
<b>Variance</b>	See Exception.
<b>Water body segment</b>	A stream reach or portion of a water body generally having the same characteristics. Water body segments may be defined by reaches between confluences with major tributaries or by section lines on a 1:24,000 scale topographical map.
<b>Watershed</b>	The land area that drains into a stream, lake, or other body of water. An area of land that contributes runoff to one specific delivery point. Large watersheds may be composed of several smaller subwatersheds, each of which contributes runoff to different runoff locations that ultimately combine at a common delivery point or receiving water. The words “watershed” and “basin” are often used interchangeably.
<b>Water quality</b>	A term used to describe the chemical, physical, and biological characteristics of water, usually in respect to its suitability for a particular purpose.
<b>Water quality criteria</b>	Levels or measures of water quality considered necessary to protect a beneficial use.

<b>Water quality standards</b>	Minimum requirements of purity of water for various uses; levels or measures of water quality considered necessary to protect a beneficial use. In Washington State, the Department of Ecology sets water quality standards.
<b>Waters of the state</b>	State waters include lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, wetlands, and all other surface waters and watercourses within the jurisdiction of the state of Washington.
<b>Water table</b>	The upper surface or top of the saturated portion of the soil or bedrock layer, indicating the uppermost extent of groundwater.
<b>Wetlands</b>	Areas characterized by saturated or nearly saturated soils most of the year that form an interface between terrestrial (land-based) and aquatic environments. Wetlands include marshes around lakes or ponds and along river or stream channels.

